

CONTRIBUTIONS TO CLINICAL
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8

TEN CASES OF LITHOLAPAXY.

BY

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TEN CASES OF LITHOLAPAXY.

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THE operation for complete removal of calculi from the bladder by crushing and evacuation at one sitting, prolonged, if need be, for several hours, has already been thoroughly brought to the notice of the profession. The instruments have been described, and the different steps of the process carefully defined. The remarkable tolerance of instrumentation of even a diseased bladder, once believed to be rarely exceptional, has proved to be the very general rule, and the facility and safety with which large tubes and other instruments can be passed *per urethram*, for some time known to a few, are now within the knowledge of all surgeons.

Not only has the practicability of thus, at a single trial, removing large stones, even, been demonstrated, but, what is much better, the comparative safety of the operation has been established. So that, among adults, in a large majority of patients afflicted with stone, this method properly takes the place of lithotomy, as less formidable to contemplate and less dangerous to undergo.

The marked improvements in lithotrites and evacuating apparatus, as compared with Clover's, Thompson's and others, and the demonstration of the practical and safe working of the new plan certainly warrants its author in christening it with the very appropriate name of litholapaxy. In perfecting this operation and publishing its details and results, Prof. Henry J. Bigelow has rendered solid service to the profession, and, through its members, to a large class of sufferers.

For it he deserves hearty congratulation and unstinted praise.

Although every one conversant with the current surgical literature is familiar with litholapaxy theoretically, and quite a number of cases have been reported in the journals, yet the statistics of the operation are at present too meagre for satisfactory or accurate conclusions with regard to many points, and the publication of all new cases is very desirable. It is therefore merely to give additional testimony with reference to the new method of dealing with vesical calculus that I offer the following report:—

CASE I. John A., Scotch, aged fifty-two, farmer. Had suffered from the ordinary symptoms of stone for four or five years. Had passed “gravel stones” at different times. Urine alkaline, and contained a large amount of muco-pus and some blood. The sound revealed a rough stone at the *bas fond* of bladder. Urethra normal. Capacity, as shown by the urethrometer, thirty millimetres.

Lithotomy had been advised one year before, but he shrank from “cutting.” He was etherized, and I proceeded to lithotrize and evacuate. The stone was seized quite readily, and proved to be moderately soft. I used No. 29 (Charrière¹) evacuating tube, which passed readily after slitting the external meatus. At the end of one hour and fifty minutes the fragments ceased falling into the reservoir, and I could detect none in the bladder. No shock of consequence, and three weeks subsequently the patient reported himself, by letter, as well.

Weight of fragments, 250 grains.

CASE II. J. F. D., Irish, aged sixty-one, laborer. Had suffered from severe cystitis for over two years. Frequent and painful urination, with intermittent stream of small size; urine offensive, alkaline, and cloudy, with pus. Pain in glans penis and testicles frequent, as was

¹ All the numbers given in this article refer to the French scale of measurement.

retraction of the latter. The sound encountered a firm stricture in the membranous urethra, which admitted only No. 10 bougie, and carried on into the bladder struck a calculus clearly. After divulsing the stricture a 32 tube was passed without difficulty. I now lithotrizied and evacuated the stone in two hours and twenty minutes. Twice during the operation the pulse flagged in a marked degree, but promptly responded to hypodermic doses of whisky, and he rallied well after the operation was completed. Recovery rapid and perfect.

Weight of fragments, 347 grains.

CASE III. James L., native, age sixty-seven, jeweler. Had suffered with distinctly marked calculous symptoms for six years, although no one of several examining physicians had ever recognized the stone. Exploration revealed a large, tender prostate, and also a stone behind it. I had great difficulty, however, in finding it, and became finally convinced that it was encapsulated just behind the gland.

I passed a lithotrite, and for several minutes made futile efforts to seize the calculus, and it was not until I introduced the female blade alone, and used it patiently and most carefully as a lever-scoop, at the same time inserting the forefinger into the rectum, that I brought it into the general cavity and was able to grasp and reduce it. A 22 straight tube was first used, then a 27 curved one with the point turned downward, so as to drive the *débris* out of the sacculation. So much did this irregularity of surface retard the complete clearance of fragments from the bladder, that I twice had him turned on the face to secure the aid of gravitation, and, apparently, with good effect.

The entire mass was finally removed at the expiration of two hours and forty-two minutes. This prolonged instrumentation was well borne, and after two moderate doses of brandy he rallied well.

His physician wrote me three days later that he was

suffering from severe prostatitis, and this resulted in an abscess in the left lobe of the gland which nearly cost him his life. He survived this peril, however, and has quite steadily improved, until now, six months since the litholapaxy, he is in fair health, and entirely relieved of cystic irritation. Curiously, as fortunately, whether entirely from the suppuration process or this and additional effects of the severe and long-continued pressure of the large instruments, the prostatic enlargement and suffering have disappeared.

Weight of fragments, 658 grains.

CASE IV. Mrs. W. C., native, age thirty-eight, had endured "great agony" in passing water for over three years. The very significant symptoms need not be detailed. She had, at different times, discharged quite a number of calculi, varying in size from a mustard seed to a large pea, several of which I saw. The sound struck a large, rough stone at once.

Under ether I rapidly dilated the already capacious urethra until I could pass my forefinger readily into the bladder and touch the stone.

The bladder was so firmly contracted and its walls were so thick and dense that it was with difficulty I distended it sufficiently to give room for the lithotrite to work. This being accomplished, the crushing was rapidly done, as was also the evacuation readily effected, through a 36 tube, and the operation was completed in thirty-two minutes. When the tube was first inserted, and before I could connect with the bulb, three small but distinct calculi, the size of buck-shot, escaped and fell on the floor. She recovered without an unpleasant symptom. Three days ago, and four months since the operation, Mrs. C. called on me, in excellent health and spirits.

Weight of calculi, 1015 grains.

CASE V. Samuel F. S., Irish, aged seventy-one, blacksmith, had suffered from enlarged prostate for ten years or more, and it was difficult to determine just when the calculoid modification of symptoms obtained.

The present suffering was, however, characteristic, and the sound touched the stone readily.

I relieved him by litholapaxy in two hours and twelve minutes, using a curved evacuating tube No. 22, which, on account of the glandular hypertrophy, entered the bladder more readily than the straight instrument. There was considerable shock, but under stimulants he rallied slowly, and in three and a half months has made a good recovery.

Weight of fragments, 189 grains.

CASE VI. H. F. C., native, age seventy-five, merchant, had endured calculoid symptoms for over six years and had often "passed gravel." He was much exhausted by his sufferings, and I approached the operation, after detecting a stone in the bladder, with reluctance, and gave a very guarded prognosis.

A firm stricture existed two inches within the urethra, admitting only a No. 5 bougie, and a long irregular contraction in the membranous portion still further complicated the case. A large and irritable prostate added a third not unimportant factor to the extra difficulties. However, he being etherized, I divulsed the first stricture, dilated the membranous urethra, and, after considerable difficulty, crushed and evacuated the entire calculus through a 27 tube. Time occupied, after treating the strictures, two hours and fifty-seven minutes. Appreciable shock, which promptly yielded to judicious stimulation. On the third day he had a severe and prolonged chill, followed by a temperature of 104° , and complained of much pain in prostatic region. Large doses of quinia with morphia and whisky allayed fever and relieved the pain promptly. On the fifth day another chill, followed by reactive fever of 103° gave warrantable anxiety. But similar treatment controlled the unfavorable symptoms, and he thenceforward entered upon a slow but quite steady convalescence. At present date he is still weak, but able to walk and ride moderately, and seems likely to reach a fair health level for a man of his age.

He remains, now two months since operation, free from all symptoms of stone, although he suffers more or less from the enlarged gland.

Weight of fragments, 447 grains.

CASE VII. D. B. R., native, aged seventy-four, clergyman. Four years previous to my first examination he suffered retention from an enlarged prostate and too long holding of his water. So long was it before he was relieved by a competent physician that the bladder lost all contractile power, and has remained perfectly paralyzed ever since, requiring constant resort to the catheter, which he had learned to use himself. Urine was alkaline, very offensive, and heavily loaded with triple phosphates, mucus, and pus. No blood. The sound readily detected stone, and the urethral canal was found of large size.

Under ether he sustained the operation of litholapaxy well. I completed the operation in one hour and fifteen minutes, removing a calculus weighing 425 grains. The symptoms of cystic irritation promptly disappeared, and he has made a good, though, from previous feeble health, slow recovery. The paralysis of muscular coat of bladder remains, necessitating the use of a catheter. He is now, ten weeks since the operation, in fair health.

CASE VIII. G. B., native, aged fifty, carpenter, was operated upon for stone in a Western city four years ago, and after five different sittings the bladder was pronounced cleared. Amount or quality of fragments unknown. Severe cystitis with general fever followed and nearly proved fatal, according to his own account, and he found, as he recovered from the acute attack, the old symptoms returning. I readily detected stone, and he consented to the "new method." A very narrow and elastic stricture $3\frac{1}{2}$ inches within the external meatus required division, which I effected with an Otis's urethrotome, and I then proceeded to crush and evacuate a large stone without difficulty. Time, one hour and six minutes. Weight of fragments, 708 grains. Now, six weeks later, he is well.



CASE IX. S. T. T., Nova Scotian, aged fifty-seven, miner. Had suffered from symptoms of stone for three years, and I readily touched a calculus on exploration with sound. Urethra normal. I performed litholapaxy without difficulty, using No. 32 tubes, both straight and curved, and completed the clearance of the bladder in one hour and thirty-nine minutes. Operation was well borne. He has been entirely relieved, and now, three weeks afterwards, all mucus and pus has disappeared from the urine, which is normal, and he is rapidly regaining his flesh and strength.

CASE X. This was not a case of litholapaxy, but an attempt and failure, and its main features should go on record.

J. B., Irish, aged sixty-eight, laborer. Had for over two years sustained great and increasing pain and tenderness in hypogastric and perineal regions, with constant vesical tenesmus, and very frequent micturition, the stream, which was of normal size, being often interrupted, and the pain at its maximum at the close of the act.

I first saw him on the 23d inst., and found him very weak, with an unhealthy, cachectic look, suggesting organic disease of kidneys, and in every way presenting an unfavorable aspect. His suffering amounted to agony. The terrible tenesmus was constant, and so little urine was voided at any one time that for this and other reasons not essential to relate I failed to secure a proper sample for analysis. A large proportion of blood and pus told of extensive ulceration of the bladder, which was evidently very much contracted. The urethra was capacious, and on carrying a sound into the bladder I quite readily struck a calculus with a rough surface. He had, so he said, often passed "small gravel stones."

The parts were so tender, and he was so timid with regard to any examination, being constantly under the fear that I would in some way perform some cutting operation clandestinely, that I did not determine the

capacity of the bladder before he was etherized ; but I warned him of its small size, and of probable firm contraction, with thickened, hardened, and ulcerated walls, and on account of these conditions I suggested lithotomy as a possible necessity, provided clearance of the bladder was undertaken, and indeed as perhaps a desirable procedure for the sake of direct drainage and perfect rest of the organ. He had, however, an insurmountable prejudice against any cutting operation whatever, declaring, although very anxious for litholapaxy or *any* means of relief but the knife, that he would never, under any circumstances, be cut. On this point he made me commit myself definitely just as he began to inhale ether, and also delegated sworn and trusty friends to see that I was true to my promise.

On the 26th inst., while he was profoundly anæsthetized, I sounded, and found the stone, which was distinctly felt by several médical practitioners and students present. But from the first it gave the impression of being firmly fixed at the *bas fond* of the bladder, which impression became a conviction when the finger was introduced per rectum, and distinctly felt the calculus as the sound touched it within the bladder. I could not appreciably move it, nor could I rotate the instrument to any considerable degree. At first I thought of sacculation, but later I became convinced that it was merely grasped in the unyielding coats of the containing cavity. Then proceeding to distend the organ with warm water, I found, to my great regret, that the organ was indistensible. Again and again did we test it, until finally, convinced that, while the membranous urethra was very capacious, and so would hold a larger amount of fluid than the average canal, the bladder proper would not contain an ounce of liquid. Both lithotrite and tubes were repeatedly passed into the bladder with perfect ease, each time feeling the stone distinctly, but with all possible distention I could not separate the blades of the lithotrite more than three fourths of an inch. I could neither move the

stone by any manœuvre nor grasp it, nor could I rotate any curved beak, however short, in the cavity. The stone was evidently firmly held or imbedded in a very much hardened, thickened, and *contractured* bladder.

After conclusive demonstration of the true state of things all attempts at litholapaxy were of course abandoned, and as I was sworn not to lithotomize him, although at this juncture his friends consented, I was obliged to let him awake to his old suffering.

The exploration, etc., caused some but unimportant hæmorrhage, and it immediately ceased on desisting from instrumentation. I gave him a hypodermic dose of morphia, — one third grain. I had him put in bed. I found him, two hours later, in considerable pain, and repeated the anodyne. During the night he got thirty drops of deodorized tincture of opium, and got considerable sleep. The urine passed in but small quantity, *guttatim*. Next morning, 27th inst., I saw him at eight o'clock. He was quiet, very pale, but with a fair pulse, and temperature of 100° F. The tenesmus was moderate. I passed a catheter, and drew only about a teaspoonful of urine. He took gruel and beef tea during the night, and also while I was there in the morning. I was called out of town, and on returning at six P. M. learned that he had died an hour before.

The statement was that after my morning visit he gradually sank; not much pain, no hypogastric swelling or tenderness, profuse sweating, entire suppression of urine, ataxic delirium in the middle of the day, followed by coma and death twenty-six hours after the attempt at litholapaxy. No autopsy was obtained.

In this brief sketch of cases I have given only the main features, valuable for the statistician, avoiding any description of the operations in detail, for the reason that the readers of this article are presumed to be already familiar with this matter.

It is proper, however, to make a few statements as supplementary or explanatory. All the patients were

thoroughly etherized. None of the cases except the tenth gave any evidence of renal disease. In all but this the urine was previously analyzed and the capacity of the bladder approximately estimated. In each of the nine cases of litholapaxy consent was obtained and arrangements were made for immediate lithotomy in case of failure, from any cause, to complete the litholapaxy. In five out of the nine cases slitting of the external meatus was necessary. It is noticeable that in no case was the operation followed by cystitis or septicæmic fever. In the first six cases I used some one of my familiar lithotrites, employing at different times Cismale's, Thompson's, Teevan's, and Mercier's. In the seventh, eighth, ninth, and attempted tenth, I used Bigelow's instrument. At first I could not obtain the new lithotrite, as the first lot manufactured had been exhausted, and so with Professor Bigelow's bulb and evacuating tubes I essayed my first operation. I found that the same instruments (lithotrites) that had served me for so many years still worked so well that I did not hurry as much as I otherwise would to obtain the Bigelow instrument. The fact is that in the hands of a skillful surgeon any good lithotrite may do the crushing satisfactorily in litholapaxy. In days gone by I have never been troubled with the retention of fragments within the blades, simply because of exceeding care. I always, after driving the male blade down with crushing force upon a fragment, and before making any movement that would endanger the mucous tissue, move it back and forth several times to insure clearance of any fragments. Still I like Professor Bigelow's instrument best, and for the reasons that he clearly states in his monograph. But even this lithotrite will sometimes clog or hold fragments unless the surgeon is ~~over~~ careful. This I have proved by repeated trials with the instrument out of the bladder. I have twice experienced some embarrassment from a *piling up* of the fine powder, wet, as it is in the bladder, so that by repeated movements

the thoroughly pulverized calculoid material not only fills up the concavity of the female blade even to its edges, but goes on building up the width of the blades, until in two instances the edges of the blades were thus separated, in one case one fourth and in another one third of an inch, by this solid *mortar*. So firm was it that all the force of one hand rotating the ball only made it more dense, without molding it out through the heel slot at all. One of these cases happened in the Maine General Hospital, and was witnessed by the superintendent, Dr. Hunt, by several members of the hospital staff, and several other physicians, among whom were Drs. Small, Pendleton, and Dudley, of this city. It will readily be seen, as was demonstrated in this case, and I have repeatedly tested the matter since with similar results, that in such a condition, the blades being separated by a substance that, for the moment, in its resistance, may be compared to leather, ragged fragments or spiculæ may be caught, and without extreme care do harm. This clogging or filling will not often occur, and probably only in the softer and more porous varieties of stone that are so finely powdered under the powerful crushing and grinding process, and that retain so much moisture. But that it has happened more than once with the exercise of extreme care shows that great caution is to be exercised with any instrument. In the two cases named the urethra was none too large to allow safe withdrawal of the clogged blades. Professor Bigelow, in his monograph, has not overstated the difficulties, constant or occasional, pertaining to this operation, or the accuracy of knowledge and perfection of skill necessary to the best performance of it. No instrument, however excellent, can compensate for lack of these qualities on the part of the surgeon. The objection has been made to the Bigelow lithotrite that it is unnecessarily large and heavy, and I cannot help sharing such a feeling. It is a fault, if fault it be, on the right side, and that it is *strong* all admit. But it seems to me that a lighter in-

strument, with the same style of teeth and a large accurately fitting spur, like the one in the Mercier instrument, may answer every purpose. I am having such a one made for trial.

In each of the first nine cases reported the bladder was completely emptied at ~~the first~~ operation, and the patients all remain free from any symptoms of calculus up to date. In no case has incontinence or any other unpleasant consequence followed the use of the large tubes.

In no instance was there but the most trifling hæmorrhage, — the tenth case gave much more than all the rest, — and in four cases not a drop of blood was seen from first to last, and one of these was the case in the Maine General Hospital, in which the peculiar filling up of the female blade, already alluded to, occurred.

PORTLAND, *June 30, 1880.*



